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PLANNING FOR DISTRIBUTION OF INDUSTRIES

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Some interesting and instructive articles written by Mr. Graham Taylor, Jr., and published in *The Survey* under the title of "Satellite Cities," cover in a very clear way the conditions which exist in the purely industrial communities which have grown up adjacent to but distinct from the large cities. These articles lay bare the mistakes and faults in street planning, real estate control, housing and social and political development in these communities. They touch on but do not discuss the industrial areas which lie inside of and are a part of the life of the city itself. Neither do they discuss what are purely large industrial communities such as the manufacturing towns of New Jersey and Massachusetts. Little could be added to this study of "Satellite Cities" made by Mr. Taylor.

It is not the purpose of this paper, however, to treat of "Satellite Cities." Our purpose is rather to discuss and determine the forces and tendencies which are at work within the city itself, and which control its industrial development and to try and find, if possible, some way of directing and adjusting these forces and tendencies in such a way that the whole city may develop in the best possible manner.

To take an absolutely unoccupied stretch of country and lay out upon it an industrial area and fit to this industrial area the proper street system, the proper transportation lines and the proper laws of housing, is a matter of comparative physical ease. The real problems which arise in such a case depend for their solution on the ethical and moral sense of the individual or corporation responsible for the development, rather than upon the ingenuity of the architect or engineer who makes the design. Upon the individual or corporation lies the burden of carrying out the design; on him rests the control of the nature of the dwellings which shall be erected, of the political and social organization which shall be developed; his is the responsibility for the actual carrying out of the improvements suggested for transportation and for streets. He has an absolutely free hand in a virgin field in which to work and his falling short is due to his carelessness, to his lack of ethical sense, or to his greed.

In a city, however, the problem is different. The situation is complex. In the place of individual control and responsibility there are community control and community responsibility. Certain fixed elements appear which cannot be removed. All the economic forces which sway industrial development are at work uncontrolled and undirected. These economic forces ignore and set aside consideration of their effect on the living conditions of the workers—of their effect on localities. They bring about industrial development indiscriminately all over the city, paying no attention to the fact that this may change completely the character of a whole neighborhood.

Could these forces be controlled or even directed, an orderly development might be arrived at which would result in benefit to the living conditions of the whole city. There would be an organic whole functioning properly in all its parts. It would be possible to plan improvements for the future for any section of the city and be certain that these improvements would be the proper ones when the time came to carry them out. It would give more stability to land values and would enable assessments for general improvements to be laid with closer relation to the benefits derived than is possible at present.

In planning for industrial areas inside the cities themselves, therefore, what we are most concerned with are the forces which are behind industrial development. The ends to be attained are, of course, to be firmly fixed in our minds. These may be said to be: (a) The developing to a maximum of the industrial potentialities of a city; (b) the provision of proper working and living conditions for the workers; and (c) the proper safeguarding and developing of the city as a whole.

Generally speaking, the utility of land in the city falls into three classes: business utility, industrial utility and residential utility. The areas devoted to these purposes are separated by more or less definite lines and are themselves subdivided according to the specific nature or class of use for each purpose. Business area for instance lies generally at the focus of local transportation routes or in other words at the point of intersection of the strongest lines of local travel. This point is very often at the geographical center of the city which can be reached from all sections of the city with equal facility. The industrial area on the other hand has no one definite location, as has the business area. Depending largely on railroad facilities, it soon becomes scattered throughout all sections of the city forcing its way

from all directions in wedges almost to the business heart. There is generally no control and no concentration other than that offered by the railroad lines. To residential purposes is devoted the rest of the land in the city. This is generally of three classes: fine residential area; general residential area; and tenement area. The first of these preempts those sections of the city which have the greatest number of pleasing and natural advantages. The second, in general, lies along the thoroughfares and highways which have the best transportation facilities and also along such railroads as provide suburban transportation. The third class, the tenement areas, are generally found in the industrial regions and in the pockets or areas that lie between railroad lines and close to the center.

The forces which govern industrial development in the larger city may be classed as follows: (1) Railroad shipping facilities; (2) price of land; (3) labor market; (4) transportation for workers; (5) nature of industry; (6) power; and (7) origin of raw material.

It is the general tendency of industry to seek the points to which they can most easily bring their raw material, and from which they can ship most easily their finished product. The larger the industry the more important that it should have access to all the different shipping facilities in the city—water and rail. Inasmuch as the railroads are known elements in our problem, their location and right of way being fixed and more or less unalterable, we can safely say that in the area in which are concentrated the majority of the railroad lines entering the city and the waterways, if any, that is at the focus of transportation, the great industrial development will take place, and adjacent to that focus the majority of industries will concentrate. If a city, however, is well supplied with belt lines, these belt lines will serve to spread out and elongate this area. They create practically an "elongated" focus for they touch every railroad which enters the community. In a city with belt lines, therefore, we may expect our industrial development to send off from the area of concentration long arms along these belt lines. The increasing price of real estate in the larger cities is a centrifugal force driving industries to the outskirts of the city where land is cheaper. The presence of the belt line spreads this area over a large territory, bringing into the market large areas and keeping the general level of prices low.

The next two forces which affect industrial development are closely related. While industry demands a flexible labor market, workmen

should have the benefit of as constant a demand for labor as possible. It is necessary, therefore, for a workman to live in a locality from which he can reach more than one center of industry. To have an industrial development with the workmen's houses clustering around it creates serious difficulties, unless liberal transportation facilities connect this one industrial region with others and with the center of the city, nor does this act only one way. If there are not such liberal transportation facilities, the workman is dependent on this one industry for livelihood. When a shut-down occurs in the factory or the working force is reduced, a great many of these workmen are left without means of livelihood and without a chance to go to other places where such means can be had. On the other hand, if liberal transportation facilities are provided, these facilities will be patronized during such periods when there is shortage of work in one locality or another, and the workmen desire to go to other centers. If, however, the industries are running at their full capacity, then these transportation lines are without patrons and consequently suffer.

There is a general tendency, which amounts almost to a law of industrial development for industries of a similar nature to group themselves in the same locality. We find the majority of the steel and steel products industries together, of the lumber and wood working trades together. So also is it with the garment factories and the chemical manufacturers—in fact with almost any well defined class of manufacture.

There are evidences appearing, although not yet clearly defined except in a few special manufacturers, which lead us to the belief that there is also a tendency of manufacturing interests to seek the section of the city which is within easiest reach of the source of their raw materials. This is natural and easily understood for the reason that the time consumed in taking freight through and around large commercial centers is becoming greater every year, and industry cannot afford this time waiting for this raw material upon which it depends. The material must be brought to it quickly and with minimum delay. So also is it with the finished product. Transportation facilities for distribution must be provided reasonably quickly, as much of the modern commercial superiority depends upon service.

In nearly all of the cities belt lines are becoming lined with industrial development, so also is the area in which lies the majority of the railroads. The effect of this industrial development is patent in

any city. It fixes definitely the city's structure and scatters manufacturing establishments wherever there is a railroad line. That the individual under existing laws has the right to use his property as he sees fit, no one can deny. The problem, therefore, of the location of industries comes down to one of community control. Until the community can be brought to see the benefits which arise from controlling the forces which direct the location of industries, it is hopeless and impossible to attempt any planning of industrial areas. For their guidance in arriving at such control the following principles may be enunciated:

1. That the industries must be concentrated in an area where there is possible the greatest amount of railroad service.
2. That the existing residential areas must be protected and industries prohibited from locating where they will spoil them.
3. That there must be adequate flexible labor market.

It is impossible, in discussing the relation of workers to industrial development, to ignore the factor that it is necessary for families to be within reach of various lines of work, both inside and in the outlying sections of the city. All members of the household units do not work in the same plant, and some even work in the business section of the city itself. To remove the family as a whole to the outskirts—to the country—would, unless adequate transportation facilities existed which allowed of diversity of occupation, reduce all its members to one dead level of uniformity, or instead would break up its unity. It is useless, therefore, for us even to discuss the probability of opening up new areas for housing workers, unless we can provide them varied employment or many transportation facilities to other sections. This is one of the reasons for keeping intact existing residential areas and for concentrating industrial occupation of land.

So far we have determined what are the forces which control industrial development, and which must be directed in taking care of and in planning for industrial development. There remains to consider the general city good and the forces which demand such recognition in the plan of the city. It is impossible to ignore the general welfare and the general needs. This connection between the general city plan and industrial development lies, as has been shown above, in the distribution of the workers, in the provision for transportation and in the preservation of residential areas in the city. That the living conditions of industrial workers in the cities must be alleviated

no one can deny. Individual efficiency can be raised only by doing so. And it is the duty of the community to assume the responsibility.

We come, therefore, to these conclusions that the area for the housing of working people must be in a district from which can be reached both the city and several sections of the industrial area itself. It must be free from industry. It must be healthful, well-built and be provided with proper recreational activities.

Following along the lines discussed above, we should devote to industrial purposes the area in which lies the focus of the railroads. We should relate this area properly to such water connections as exist. This district lies in most cities at the circumference and generally there is one area which has more than another of the requirements to be met. If there were no focus we ought to create one by the construction of a belt line and locate our district where it would be least harmful to the city as a whole.

The residential areas should lie between this industrial district and the center of the city, serving also the demand for workers in the business areas. They should be connected adequately with both of these districts by transportation lines.

In this paper it has been possible only to outline the method of study and some of the larger elements of the problem. The conditions in each city vary so much that only in the main features will they agree. The only factors which we find existing in all cities are the forces—economic and social.

To solve properly the problem there is need of coöperation from all the individuals interested, from the business men, the industrial corporations, the railroad and shipping interests, the social workers and city government. To this end the following recommendations are made:

1. That a responsible body of representatives of commerce, transportation, railroad interests, social workers and city government be brought together to study thoroughly the tendencies in each particular city and to formulate legislation for zoning the city.

2. That power be obtained by each city from the legislature of the state which will enable it to control the development which may take place within its borders and for a certain distance outside of its borders. The city must have control of the area which at some future day it may annex.